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ABSTRACT

A self-administered questionnaire about practices and attitudes toward vocational special needs (VSN) students was distributed to a sample of 245 secondary industrial education (IE) teachers in seven central states (Colorado, Iowa, Kansas, Missouri, Nebraska, South Dakota, and Wyoming). Analysis of 135 returns (55 percent) found moderately positive attitudes. Analysis of variance procedures revealed that age, exposure to special needs students, education level, teaching experience, perceived adequacy of training, and involvement in developing Individualized Education Plans (IEPs) were not significant in determining attitudes. One-fourth of IE teachers reported involvement in the IEP process. Preservice and inservice training was perceived as inadequate; however, most teachers felt effective and successful with special needs students. Degree of perceived success was significant: educators who felt they were successful in teaching VSN students had more positive attitudes. IE teachers' practices and attitudes are consistent with comparable vocational education studies. Future training should target technical aspects of teaching VSN students instead of attempting to change attitudes. Future research should determine the effects of practices and attitudes on student achievement. (22 reference) (KC)

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Practices and Attitudes of Secondary Industrial Education Teachers Toward Students with Special Needs

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Practices and Attitudes of Secondary Industrial Education Teachers Toward Students with Special Needs

Abstract

A self-administered questionnaire about practices and attitudes toward vocational special needs (*VSN*) students was distributed for secondary industrial education (*IE*) teachers in seven central states. A 55% response rate found moderately positive attitudes. *ANOVA* procedures revealed age, exposure to special needs students, education level, teaching experience, perceived adequacy of training and involvement in developing Individualized Education Plans (*IEP*) were not significant in determining attitudes. One-fourth of *IE* teachers reported involvement in the *IEP* process. Preservice and inservice training was perceived as inadequate, however, most felt effective and successful with special needs students. Degree of perceived success was significant; educators who felt they were successful in teaching *VSN* students held more positive attitudes. *IE* teachers' practices and attitudes are consistent with comparable vocational education studies. Future training should target technical aspects of teaching *VSN* students instead of attempting to change attitudes. Future research should determine the effects of practices and attitudes on students achievement.

Practices and Attitudes of Secondary Industrial Education Teachers Toward Students with Special Needs

Under the precepts of Public Law 94-142, the Carl D. Perkins Act of 1985 (P.L. 98-524), and similar legislation, equal access to public education has been granted to special needs students (Meers, 1987; Okolo & Sitlington, 1988; Peterson & Thomas, 1987). As early as 1982, McDaniel had predicted that most vocational teachers would eventually have special needs students in their classes. And Claxton (1986) observed that the emphasis on integration of special needs students into regular classes had, indeed, resulted in a significant increase in the enrollment of handicapped and academically and/or economically disadvantaged students in vocational education.

Industrial education has long been recognized as excellent job preparation for special needs students (Okolo & Sitlington, 1988; Sarkees & Scott, 1982). This fact, along with the federal "equal access' mandates, has led to an increase in the enrollment of special needs students in regular industrial arts/technology education and vocational-industrial education classes. In order for teachers of special needs students to achieve success, "it is imperative that teachers be knowledgeable, well-prepared, and have positive attitudes toward special needs students." (McDaniel, 1982, p. 378).

Many factors may influence an industrial education teacher's attitude toward and effectiveness in training special needs students; these factors include preservice teacher preparation and inservice training, levels of school support received, and beliefs about teaching special needs students in the regular classroom. A number of researchers have pointed to the critical relationship that exists between teacher attitude and the degree of effectiveness in teaching special needs students (Larrivee & Cook, 1979; McDaniel, 1982; Okolo & Sitlington, 1988; Shotel, Iano, & McGettigan, 1972). Shada (1985) points out that "it is the attitude of the vocational teacher that ultimately determines the success or failure of the handicapped student within the classroom" (p. 6).

Industrial education teachers' perceptions about special needs students must be examined in greater detail. Selected demographic and programmatic variables, for example, should be

studied to determine possible effects on teacher attitudes toward special needs students. Relatively few empirical studies, however, have examined this situation for secondary industrial education teachers. Thus, this study should be of interest to education professionals seeking a clearer understanding of the attitudes and practices of secondary industrial education toward special needs students.

Objectives of the Study

The purpose of this study was two-fold: (a) to describe the attitudes and practices of secondary industrial education teachers in regard to special needs students and (b) to determine the effects of selected factors on the attitudes of industrial educators who teach students with special needs. Specific research objectives were:

1. Examine attitudes and practices of secondary industrial education teachers toward students with special needs in the regular classroom.
2. Examine the effect of the following specific variables on the attitudes of secondary industrial education teachers' toward special needs students:
   2.1 gender, age, education level, years of teaching experience, exposure to special needs students, and involvement in developing Individualized Education Programs (*IEP*);
   2.2 preservice and inservice training;
   2.3 levels of support from counselors, administrators, and special education personnel.

Review of Literature

The investigation of educator attitudes toward special needs students has produced somewhat indefinite conclusions. Prior studies, as reviewed by Larrivee and Cook (1979) revealed conflicting data and few conclusive results from the examination of the effect of teacher-related variables (e.g., gender, age, education, years of teaching experience) on attitudes toward special needs students. More recent studies seem to indicate that attitudes of vocational teachers toward special needs students tend to be uniformly positive. Claxton (1986) found that postsecondary trade and industrial education (*T&I*) teachers in vocational-technical schools generally hold positive attitudes toward handicapped individuals. Secondary vocational agriculture teachers also maintain positive attitudes toward special needs students (Shada, 1985). Okolo and Sitlington (1988) have also reported that the attitudes of vocational teachers toward special needs students were positive, regardless of vocational area taught, degree of

education attained, or levels of prior training received by the instructor. In addition, they found that years of teaching experience did not significantly affect teacher attitudes. Veir (1989) noted that a majority of high school principals (80%) believed vocational teachers willingly accept special needs students in their classrooms.

Teacher Training

Zigler and Muenchow (1979) have emphasized the importance of training for educators and other personnel who work with special needs students. More recently, training vocational education teachers to work with special needs students has been identified as a national priority by the U.S. Department of Education (Peterson & Thomas, 1987).

Despite the realization that teacher training is important, some studies indicate that many vocational educators still do not receive adequate training to teach students with special needs. Okolo and Sitlington (1988) found that over one-third (38%) of secondary vocational educators in Indiana had received no type of prior training in the teaching of handicapped students. High school principals reported that 52% of their vocational teachers had no preparation for working with special needs students in their classrooms (Veir, 1989). Weber, Puleo, Kurth, Fisch, and Schaffner (1988) summarized their findings regarding vocational teacher training or preparation for students having special needs as follows: "Overall, the observed results suggest that teachers currently receive very limited training - and vocational teachers receive even less than nonvocational- both through formal college courses and inservice, in working with and addressing their unique needs of various at-risk students" (p. 37). On the basis of their findings, Weber, et al. recommended significant increases in overall levels of preparation and training for teachers working with special needs students.

IEP Involvement

Research has demonstrated that the development and implementation of a student's Individualized Education Program (*IEP*) has significant impact on teacher attitudes toward special needs students. An *IEP* is a written statement, prepared annually, which outlines appropriate educational activities and documents decisions reached about the objectives, content, implementation, and evaluation of a student's educational program, depending on

individual need. The *IEP* is intended as a guide to facilitating proper placement and programming for handicapped students (Hallahan & Kauffman, 1988; Meers, 1987; Nunn, Andrews, & Morreau, 1987; Sarkees, 1987). Claxton (1986) reported that involvement in *IEP* development and attendance at *IEP* meetings were significant variables in developing positive attitudes among teachers who were involved in the *IEP* development process.

Despite the importance of teacher participation in the *IEP* process, past studies have shown vocational teacher involvement in the development process to be far from satisfactory (Sarkees, 1987). In a 1980 study, Fair indicated that the involvement of vocational educators in *IEP* development and implementation was limited. In a follow-up study, he reported that 87% of the vocational teachers he surveyed had not seen a copy of their handicapped students' *IEPs*. In addition, 100% of the vocational teachers stated that they had not participated in writing *IEP* goals for handicapped students in their classes (Fair, 1980; 1981). Cobb and Phelps (1983) reviewed written *IEPs* and found that their results "corroborated earlier research revealing extremely limited vocational educator involvement in the (*IEP*) staffing team composition" (p. 63).

More recently, Weber, et al. (1988) have indicated that the level of vocational teacher involvement in the development and/or review of *IEPs* for special needs students was generally quite limited. Nunn, et al. (1987) studied 12 individuals with teaching experience ranging from 4 to 16 years; none had been involved in *IEP* development (Sarkees, 1987). Veir (1989) found that one-third of vocational teachers were involved in the *IEP* decision-making process; however, almost one-fifth (19%) were not involved at any point in *IEP* planning and/or decision-making.

Okolo and Sitlington (1988) reported that vocational teachers perceived a minimal involvement in decisions regarding the placement of handicapped students in their classrooms. Yet, despite limited involvement in the *IEP* process, Okolo and Sitlington found vocational educators' attitudes to be highly positive toward special needs students.

Other Variables

Studies have revealed a number of other institutional and personal variables that affect teacher attitudes toward students with special needs. Higgs (1975) found a tendency for female subjects with a high degree of contact with special needs students to hold more positive attitudes than their male counterparts. Several researchers (Larrivee & Cook, 1979; Shada, 1985) have found that offering higher levels of administrative support to vocational teachers of special needs students fostered a more positive attitude among these teachers. These same researchers also found a direct correlation between teacher perception of degree of success with special needs students and teacher attitudes toward this group; that is, teachers who perceived a high degree of success with special needs students also held more positive attitudes toward these students.

Methodology

Population and Sample

This investigation focused on industrial education teachers living in the midwestern United States. Seven contiguous states were designated by the researchers as midwestern states: Colorado, Iowa, Kansas, Missouri, Nebraska, South Dakota, and Wyoming. Selection of this population was influenced, to a large extent, by the geographic proximity of these states to the researchers. The population for this study consisted of all secondary industrial education teachers ($N = 2975$) from the designated region. Secondary industrial education teachers were identified from directories obtained from each state's department of education.

A total of 245 secondary industrial education teachers comprised the final sample. A stratified random sampling procedure was employed to ensure selection of a proportionate number of respondents from each state. The percentage of industrial education teachers contributed by each state to the total number in the population was calculated. Teachers were then randomly selected to reflect the varying percentages that each state contributed to the total. In this fashion, each state served as a subset of the population and was used to contribute a representative number of respondents to the total. Sample size was determined at a 90% confidence level using a formula proposed by Nunnery and Kimbrough (1971).

The final sample included industrial education teachers who taught (a) industrial arts/technology education courses only (32.6%), (b) vocational-industrial education courses only (40.7%), and/or (c) both types of courses (26.7%). Most of the respondents taught in general or comprehensive high schools, while less than 15% of the total taught in area vocational high school settings. A majority of the sample was male (98.5%), while two-thirds were 36 years of age or older (69%). Years of teaching experience ranged from 1 to 35 years, averaging 15.95 years. Most of those surveyed held the bachelor's or master's degree (82%). Of those who graduated from college, 75.6% received their degree in industrial education. Respondents were asked to list the total number of special needs students in their classes. A special needs student was defined for respondents as any student diagnosed with a disability or one who had been determined to be academically or economically disadvantaged. Three-fourths (71%) of industrial educators reported teaching 10 or fewer students with special needs; half of the sample (46%) reported teaching five or fewer special needs students.

Instrumentation

A questionnaire was used to determine secondary industrial education teachers' attitudes toward students with special needs in regular classrooms. Participants were asked to respond to 21 separate statements using a 4-point Likert-Type scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly Agree*). Items used to survey teacher attitudes were adapted from questionnaires previously used to investigate attitudes of public school teachers (Larrivee & Cook, 1979) and vocational agriculture students into the regular classroom. The focus of the current study was expanded from these prior studies to include teacher attitudes toward all students with special needs. Examples of attitude scale items are "Students with special needs should be given every opportunity to function in the regular classroom setting whenever possible" and "The extra attention which special needs students require is detrimental to other students. A Cronbach alpha reliability coefficient of .83 was computed for the attitude scale.

Respondents were asked to indicate the level(s) of support they received from school counselors, administrators, and special education personnel. Responses were recorded on a 5-point scale ranging from very low to very high. Each participants was asked to provide

information on the degree of effectiveness (success) experienced in teaching special needs students. Using the same five-point scale, respondents were asked to indicate their degree of success (e.g., "My degree of success in dealing with special needs students in the regular classroom has been"). Participants were also asked to agree or disagree with the statement, "I am effective in teaching students who have special needs".

Procedure

In order to identify and correct any problems, a pretest of the questionnaire was completed prior to the full-scale survey. A final version of the survey instrument and a one-page cover letter and self-addressed, stamped envelope were mailed to a sample of 245 secondary industrial education teachers in April, 1989. Following a 3-week waiting period, a follow-up mailing was made to those individuals who did not respond to the initial mailing. Returned surveys were accepted for an additional 2-week period, at which time data collection ceased. This procedure resulted in a total of 135 usable questionnaires being returned, for a response rate of 55%. Response bias was not detected, as early and late responses were not significantly different, [$t(133) = .983$, n.s.].

Data Analysis

A combination of descriptive and inferential statistics generated with the SPSS-X computer statistical package was used to address each research objective. Negatively worded attitude scale items were recoded to reflect positively worded responses. Multiple statistical tests were used, hence, the possibility of making a Type I error (rejecting a true null hypothesis) was increased. To counter this problem, the alpha level for all statistical tests was set at the .01 level (Moore, Burnett, & Moore, 1986).

Results

The goal of the first research objective was to describe practices and attitudes of industrial education teachers toward students with special needs. Results that address this research objective are divided into the following categories: perceptions of teaching effectiveness, preservice and inservice training, *IEP* involvement, and expressed attitudes toward students with special needs.

Teacher Effectiveness

Participants were asked to indicate the degree of effectiveness that they felt they achieved in teaching students with special needs. In general, industrial educators reported feeling successful in teaching students with special needs. Eighty-nine percent believed their past teaching efforts with special needs students were successful. Similarly, most (81%) believed their current teaching efforts with special needs students were effective.

Teacher Training

Information was requested on levels of preservice and inservice teacher training that focused on teaching special needs students. Twenty-five percent of the sample reported receiving no prior instruction in teaching special needs students at either preservice or inservice levels. Those who had received preservice training were asked to indicate how adequately prepared they felt to teach special needs students as first-year industrial education teachers. Only 22% of the respondents reported feeling adequately prepared, while the greater majority (77%) felt their preservice training was not adequate.

Frequency of inservice training on various aspects of teaching special needs students was also examined. Over three-fourths of the industrial education teachers (79%) reported that they had not received inservice training on students from their schools. Seventy-seven percent of the respondents felt inservice training was a useful method for improving teacher effectiveness with special needs students; however, when asked about future plans for training (e.g., college courses, workshops, inservice) to improve their skills, two-thirds of the participants (68%) indicated no plans for training within the next 6 months.

Involvement in the IEP Process

Industrial educators were asked about their degree of involvement in the *IEP* meetings of special needs students enrolled in their classes. Seventy-four percent of the responding teachers reported having no involvement in the development of students' *IEPs*.

Attitudes Toward Students with Special Needs

Attitudes of secondary industrial education teachers toward students with special needs were moderately positive. Mean scores for individual scale items ranged from 1.91 to 3.09. An

overall mean of 2.60 was generated for the attitude scale items. Table 1 displays the mean and standard deviation for each scale item used to assess teacher attitude toward students with special needs.

Insert Table 1 about here

The second research objective was to examine variables which may affect the attitudes of secondary industrial education teachers toward students with special needs. Data were collected to address this major research objective and the three sub-objectives originally proposed. Data are arranged and examined according to the effects of demographic variables, preservice/inservice teacher training, and perceived levels of support received.

Demographic Variables

Separate one-way analysis of variance (*ANOVA*) procedures were used to compare the influence of age, exposure to students with special needs, and perceived degree of teaching success on industrial educator attitudes. No significant differences in attitudes were found in relation to age, $F(2, 132) = .064$, n.s., or in exposure to special needs students, $F(2, 130) = .298$, n.s. A significant difference in attitude did exist when perceived degree of success in teaching special needs students was examined, $F(2, 130) = 19.10$, $p < .01$. A Tukey HSD post hoc follow-up test revealed that industrial educators' attitudes toward teaching special needs students became increasingly positive as their perceptions of teaching success increased (see Table 2).

Insert Table 2 about here

Involvement or lack of involvement in the *IEP* process was examined as a possible influence on teacher attitude toward special needs students. The results of a *t*-test indicating involvement or lack of involvement in the *IEP* process did not significantly influence teacher attitudes, $t(132) = 1.92$, n.s.

A possible interaction between respondents' level of education and years of teaching experience on attitude was examined using a two-way *ANOVA*. Results revealed no significant

differences in attitude by the main effects of level of education, $F(2, 120) = .225$, n.s., and years of teaching experience, $F(3, 120) = .126$, n.s., or in the two-way interaction of education and teaching experience, $F(6, 120) = .103$, n.s.

Preservice/Inservice Training

A two-way *ANOVA* was employed to examine possible interaction between levels of preservice-inservice training and the degree to which respondents perceived that they were adequately prepared to work with special needs students when they began teaching. The main effects of training, $F(1, 129) = .571$, n.s., and degree of adequate preparation, $F(1, 129) = 1.170$, n.s., did not significantly influence teacher attitudes. Similarly, the two-way interaction between these two variables were not significant, $F(1, 129) = .055$, n.s.

Perceived Levels of Support

Perceived levels of support from school administrators, school counselors, special education personnel, and others (other teachers and informal support systems within the school) were assessed. Overall, industrial educators perceived average to high levels of support for teaching special needs students. Special education personnel were perceived to offer the most support (high or very high responses for special education personnel support [49.6%]). Administrative and counselor support were perceived as providing average levels of support. A full regression model was used to examine the relationship of four variables of perceived support and teacher attitude toward special needs learners. Levels of support accounted for approximately 8% of the variance in attitude scores ($r^2 = .081$, $p < .05$). A stepwise regression indicated that informal sources of support within the school accounted for a majority of the explained variance ($r^2 = .073$, $p < .01$).

Discussion

The purpose of this study was to examine the practices and attitudes of secondary industrial education teachers (i.e., industrial arts/technology education and vocational-industrial education teachers) toward students with special needs. Results of this study provide a clearer picture and better understanding of this situation. The following is a brief discussion of the results and possible implications of the findings.

Overall, industrial educators' attitudes were moderately positive. This finding generally extends the findings obtained from past studies, which have reported positive attitudes of vocational educators toward students with special needs. Although not to the degree found in prior studies, the attitudes of the industrial educators in this study are similar (in terms of being positive) to both agriculture educators (Shada, 1985) and postsecondary *T&I* educators (Claxton, 1986). The findings of this study also offer additional support to Okolo and Sitlington's (1988) contention that teacher attitudes are positive regardless of vocational area taught.

Past studies have provided no conclusive evidence regarding the possible effects of demographic variables on teacher attitudes. In this study, the demographic variables of age, exposure to special needs learners, level of education, and years of teaching experience did not significantly influence secondary industrial educators' attitudes. Results again support the findings of Okolo and Sitlington (1988), who indicated that educational level and years of teaching experience were not significant variables in determination of vocational teacher attitudes.

An examination of vocational educators' attitudes and their involvement in the *IEP* development process is important because it "is an excellent opportunity to share information on the student's educational program and to share curriculum content between two fields" (West, 1987, p. 93). The industrial education teachers in this study, however, reported minimal involvement in the *IEP* process. In fact, almost three-fourths of the sample reported no involvement in the development of *IEPs* for special needs students in their classroom. This figure reflects part reports, which have described a lack of *IEP* involvement for vocational educators (Cobb & Phelps, 1983; Fair, 1980, 1981; Nunn, et al., 1987; Okolo & Sitlington, 1988; Sarkees, 1987; Veir, 1989, Weber, et al., 1988). The alarmingly low incidence of vocational education teacher involvement in this process must be examined more closely by local school personnel. Given the relatively high enrollment of special needs students in industrial education programs, it is essential that vocational educators be involved in the development and implementation of their students' *IEPs*.

In this study, teacher attitudes were not significantly influenced by their degree of involvement in *IEP* development. In general, educators held positive attitudes toward special needs students regardless of their degree of involvement in the *IEP* process. This finding conflicts with results reported by Claxton (1986), who found that participation in *IEP* development and attendance at *IEP* meetings were significant variables in teacher attitudes. Several possible explanations for these conflicting results can be advanced.

One explanation may be differing teacher populations studied. Claxton focused her efforts on postsecondary *T&I* teachers, whereas the present study examined a mix of secondary industrial education teachers (e.g., industrial arts/technology education and vocational-industrial education teachers). It is possible that certain personality traits or other personal characteristics may be inherent in these secondary industrial educators, causing them to be more accepting of special needs students.

The backgrounds of secondary and postsecondary *T&I* instructors may also be a factor. For example, many postsecondary *T&I* instructors enter teaching directly from business and industry without formal teaching experience or training. This lack of preparation may result in a corresponding lack of knowledge and/or appreciation for working with a variety of students who possess different learning abilities. Not prepared with this knowledge, these instructors may require involvement in the *IEP* process in order to appreciate the barriers faced by special needs students and to help these students take the steps necessary to overcome them. Regardless of specific reasons, it appears that the midwestern secondary industrial education teachers focused on in this study do not require *IEP* involvement to embrace positive attitudes toward special needs students.

Teacher preparation and inservice training for industrial educators who teach special needs students appears to be quite limited. One-fourth of the sample in this study reported no prior training of any type at either the preparation of inservice level. This finding is lower but fairly consistent with reported training levels from past studies (Fair, 1981; Okolo & Sitlington, 1988; Veir, 1989). At the teacher preparation level, a majority of instructors believed that they had been inadequately prepared to teach special needs students, while less

than one-fourth had received training on the topic after entry into the teaching profession. The findings are somewhat contradictory; that is, although the industrial education teachers reported inadequate preparation, they are not pursuing the types of training they felt they lacked. Teacher attitudes were not significantly influenced by degree of training or perception of the adequacy of preparation.

In general, support provided by administrators, school counselors, special education personnel, and from more informal sources (i.e., fellow teachers) were perceived at average levels or above. Support from administrators, school counselors, and special education personnel, however, appeared to have little effect on attitudes. When these three sources of support were combined, they accounted for less than 1% of the total explained variance on attitude scores. Results differ from findings reported by Larrivee and Cook (1979) and Shada (1985), who found that greater support from administrators led to a more positive teacher attitude.

A majority of the known variance in teacher attitude toward special needs students was attributable to informal sources of support (e.g., peers, other teachers, family, and friends); however, this variable accounted for only a small percentage (7%) of the total variance. Thus, we are faced with the fact that approximately 92% of the variance for teacher attitude toward special needs students is unknown. As a result, attention must be directed toward in-depth examination of (a) specific sources of informal support, as this category was not precisely defined, (b) other influences not addressed in this study (e.g., family background, personal experiences, values), and (c) the degree of impact these variables have on teacher attitudes toward special needs students.

While many of the industrial educators felt successful in teaching special needs students, the response was not unanimous. When influence of perceived teaching success on attitude was examined, perceptions held about teaching success were found to have a significant impact on attitudes. Teachers who experienced high or very high levels of success teaching special needs students also held more positive attitudes toward them. Likewise, teachers who perceived an average degree of teaching success with special needs students held significantly more positive

attitudes than those reporting low or very low degrees of success. This finding supports the research of Larrivee and Cook (1979), which indicated that degree of success in dealing with special needs students was the single most important variable they examined.

The use of findings to generalize beyond the present population would be inappropriate. The scope of these findings must be limited to those secondary industrial education teachers (as defined) in the identified region of seven midwestern states. Similarly, the limitations inherent in self-report survey methodology must be kept in mind when interpreting the results. Nevertheless, even with these limitations, several conclusions can be drawn. The present study has, generally, extended the findings of past research efforts which examined practices and attitudes of vocational educators toward special needs students. Practices and perceptions reported by industrial educators in this study tend to reflect results obtained in prior studies of vocational educators. It also appears that the attitudes of this sample of secondary industrial education teachers toward students with special needs are consistent with past findings reported for other groups of vocational educators.

Further study is recommended in several areas. Similar studies could be conducted with secondary industrial educators in other regions of the country to determine existing attitudes and practices in those areas. Future research should be broadened to examine specific secondary vocational education programs as separate entities (e.g., business education, home economics, T&I). Results obtained from such studies could be used to further develop our knowledge of vocational educators' practices with and attitudes toward students with special needs. Finally, an effort should be undertaken to expand current research on vocational teacher practices and attitudes to include an examination of possible effects these variables have on achievement levels of special needs learners. Questions raised in this line of inquiry might include : Do special needs students have higher achievement levels when taught by teachers with positive attitudes toward them? or Do achievement levels of special needs students differ when these students are taught by teachers who, themselves, have varying degrees of positive and negative attitudes?

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Table 1

Descriptive Results of Attitude Scale: Perceptions of Secondary Industrial Education Teachers Toward Students with Special Needs.

Item Statement	*M*[a]	*SD*
The extra attention which special needs students require is detrimental to other students.	2.84	.81
Students with special needs should be given every opportunity to function in the regular classroom setting whenever possible.	3.09	.72
Teaching students with special needs is better done by resource or special education teachers, not by regular classroom teachers.	2.35	.82
Working with special needs students is a topic which should only be covered in special education rather than industrial education courses.	1.91	.68
Students with the most severe disability or disadvantage can best be served in a separate classroom.	3.07	.77
It is difficult to maintain order in a regular classroom that contains students with special needs.	2.41	.80
Students with special needs monopolize a teacher's time.	2.72	.68
Having students with special needs in a regular classroom promotes acceptance of differences by all students.	2.84	.60
Students with special needs who are placed in regular classrooms are socially isolated from other classroom students.	2.15	.62
Students with special needs represent a hazard in shop areas, especially around dangerous equipment.	2.60	.80

Note. Overall mean score for industrial education teachers on the attitude scale equals 2.60.

[a]Scoring Key: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly Agree*.

Table 2

Differences in Mean Attitude Scores of Secondary Industrial Educators Based on Perceived Degree of Teaching Success with Special Needs Students.

Group	*M*[a]	Average Success	High Success
Low Success	1.99	.57*	.76*
Average Success	2.56		.19*
High Success	2.75		

[a]Scoring Key: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly Agree*.

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